CLAIMS

The invention claimed is:

1. A vehicle information display assembly, comprising:

a light source positioned behind a transflective reflector with respect to a viewer; and

a controller configured to generate a light source control signal as a function of light rays originating from said light source and light rays reflected by said reflector.

2. A vehicle information display assembly as in claim 1, wherein said light rays originating from said light source are a function of the energy supplied to said light source.

3. A vehicle information display assembly as in claim 1, wherein said light rays reflected by said reflector are a function of light rays directed toward said reflector.

4. A vehicle information display assembly as in claim 3, wherein said light rays directed toward said reflector are sensed by a light sensor connected to said controller.

5. A vehicle information display assembly, comprising:

a light source positioned behind a transflective reflector with respect to a viewer; and

a controller configured to receive a light level signal, said controller is further configured to generate a light source control signal as a function of light rays originating from said light source and light rays reflected by said reflector when said light level signal is above a threshold.

6. A vehicle information display assembly as in claim 5, wherein said light rays originating from said light source are a function of the energy supplied to said light source.

7. A vehicle information display assembly as in claim 5, wherein said light rays reflected by said reflector are a function of light rays directed toward said reflector.

8. A vehicle information display assembly as in claim 7, wherein said light rays directed toward said reflector are sensed by a light sensor connected to said controller.

9. A vehicle information display assembly, comprising:

a light source positioned behind a transflective reflector with respect to a viewer; and

a controller configured to control a ratio of light rays originating from said light source with respect to light rays reflected by said reflector.

10. A vehicle information display assembly as in claim 9, wherein said light rays originating from said light source are a function of the energy supplied to said light source.

11. A vehicle information display assembly as in claim 9, wherein said light rays reflected by said reflector are a function of light rays directed toward said reflector.

12. A vehicle information display assembly as in claim 11, wherein said light rays directed toward said reflector are sensed by a light sensor connected to said controller.

13. A vehicle information display assembly, comprising:

a light source positioned behind a variable reflectance transflective reflective element with respect to a viewer; and

a controller configured to control a ratio of light rays originating from said light source with respect to light rays reflected by said reflector by controlling either: a light source brightness, a reflective element reflectance, or both a light source brightness and a reflective element reflectance.

14. A vehicle information display assembly as in claim 13, wherein said light rays originating from said light source are a function of the energy supplied to said light source.

15. A vehicle information display assembly as in claim 13, wherein said light rays reflected by said reflector are a function of light rays directed toward said reflective element.

16. A vehicle information display assembly as in claim 15, wherein said light rays directed toward said reflective element are sensed by a light sensor connected to said controller.

17. A vehicle information display assembly, comprising:

a light source positioned behind a variable reflectance transflective element; and

a controller configured to receive a light level signal, said controller is further configured to determine when said light level signal is above a threshold and to generate a light source control signal as a function of either; a light source brightness, a reflective element reflectance, or both a light source brightness and a reflective element reflectance; when said light level signal is above said threshold.

18. A vehicle information display assembly as in claim 17 and further comprising a light sensor for sensing ambient light levels wherein said controller is coupled to said light source and said light sensor, said controller determines whether daytime or nighttime conditions are present as a function of the ambient light level sensed by said light sensor, and, during daytime conditions, said controller varies the brightness level of said display within a first range of brightness levels, and, during nighttime conditions, said controller varies the brightness level of said light source within a second range of brightness levels, which is different from the first range of brightness levels.

19. A vehicle information display assembly as in claim 18, wherein said first and second ranges of brightness levels are disjoint.

20. A vehicle information display assembly as in claim 18, wherein said first and second ranges of brightness levels represent separate portions of a wider continuous range.

21. A vehicle information display assembly as in claim 18, wherein said first and second ranges of brightness levels overlap.

22. A vehicle information display assembly as in claim 18, wherein one of said first and second ranges of brightness levels is a subset of the other.

23. A vehicle information display assembly as in claim 17, wherein said variable reflectance transflective element is part of the information display, and wherein said variable reflectance transflective element comprises:

front and rear elements, said elements each having front and rear surfaces;

a transparent first electrode including a layer of conductive material carried on a surface of one of said elements;

a second electrode disposed on said front surface of said rear element; and

an electrochromic material contained between said elements,

wherein either said second electrode is a reflective electrode or a separate reflector is disposed over substantially all of said rear surface of said rear element, and wherein at least a portion of said reflective electrode/reflector is transflective.

24. A vehicle information display assembly as in claim 23 and further comprising a computer video monitor disposed over a surface of one of said front and rear elements and coupled to a computer for displaying information provided from the computer.

25. A vehicle information display assembly as in claim 23, wherein said second electrode overlying said front surface of said rear element, said second electrode includes a layer of white gold.

26. A vehicle information display assembly as in claim 23, wherein said light source is positioned behind said rear element for displaying information in a first color through said variable reflectance transflective element, wherein said light source emits light of a second color, said display assembly further comprising a second light source for emitting light of a third color, the second and third colors being different from each other and from the first color while mixing together to form light of the first color.

27. A vehicle information display assembly as in claim 26 and further comprising a liquid crystal display element, wherein said light source is arranged to transmit light through said liquid crystal display element.

28. A vehicle information display assembly as in claim 23 and further comprising an electroluminescent display disposed over a surface of one of said front and rear elements.

29. A vehicle information display assembly as in claim 23, wherein said second electrode includes a first reflective coating and a second coating of transparent electrically conductive material.

30. A reflective element, comprising:

a reversible electrochemical reflective layer and a substantially transparent electrically conductive layer, wherein said substantially transparent electrically conductive layer has a thickness that is equal to an odd integer times the desired wavelength of light at which said substantially transparent electrically conductive layer is to be optimized divided by four.

31. A reflective element as in claim 30 wherein said substantially transparent electrical conductive layer comprises indium-tin-oxide.

32. A reflective element as in claim 30 wherein said substantially transparent electrical conductive layer comprises zinc oxide.

33. A reflective element as in claim 32 wherein said substantially transparent electrical conductive layer is 0.25 times the desired wavelength of light at which said substantially transparent electrically conductive layer is to be optimized.

34. A reflective element as in claim 30 wherein said substantially transparent electrical conductive layer comprises fluorine-doped tin oxide.

35. A reflective element as in claim 34 wherein said substantially transparent electrical conductive layer is 0.25 times the desired wavelength of light at which said substantially transparent electrically conductive layer is to be optimized.

36. A mirror assembly, comprising:

a reflective element comprising a reversible electrochemical reflective layer and a substantially transparent electrically conductive layer, wherein said substantially transparent electrically conductive layer has a thickness that is equal to an odd integer times the desired wavelength of light at which said substantially transparent electrically conductive layer is to be optimized divided by four.